CLAIMS

We claim:

1. A truncated *DEC1/Stra13* polypeptide lacking the *DEC1/Stra13* repressor domain wherein the truncated polypeptide has substantially the same *PPARγ2* promoter repressing activity as full-length *DEC1/Stra13* polypeptide.
2. The truncated polypeptide of claim 1, wherein the polypeptide contains the basic helix loop helix domain of *DEC1/Stra13*.
3. The truncated polypeptide of claim 1 having the amino acid sequence of amino acids 1-141 of SEQ ID NO:2.
4. The truncated polypeptide of claim 1 having the amino acid sequence of amino acids 1-141 of SEQ ID NO:4.
5. The truncated polypeptide of any one of claims 1, 2, 3, or 4 further comprising a peptide having the amino acid sequence of SEQ ID NO: 7.
6. A truncated DEC1 polypeptide having substantially the same *PPARγ2* promoter repressing activity as a full-length DEC1 polypeptide, wherein the truncated polypeptide consists essentially of a polypeptide having the amino acid sequence of amino acids 1-141 of SEQ ID NO:2.
7. A truncated Stra13 polypeptide having substantially the same *PPARγ2* promoter repressing activity as a full-length Stra13 polypeptide, wherein the truncated polypeptide consists essentially of a polypeptide having the amino acid sequence of amino acids 1-141 of SEQ ID NO:4.
8. An isolated nucleic acid encoding a truncated *DEC1/Stra13* polypeptide lacking the *DEC1/Stra13* repressor domain wherein the truncated polypeptide has substantially the same *PPARγ2* promoter repressing activity as full-length *DEC1/Stra13* polypeptide.
9. A method of inhibiting adipogenesis comprising:

   contacting a cell with a truncated *DEC1/Stra13* polypeptide lacking the *DEC1/Stra13* repressor domain wherein the truncated polypeptide has substantially the same *PPARγ2* promoter repressing activity as full-length *DEC1/Stra13* polypeptide in an amount sufficient to repress *PPARγ2* promoter activity,

wherein expression of *PPARγ2* is reduced and adipogenesis is inhibited.

10. The method of claim 9 wherein the truncated polypeptide contains the basic helix loop helix domain of *DEC1/Stra1*3.

11. The method of claim 9 wherein the truncated polypeptide has the amino acid sequence of amino acids 1-141 of SEQ ID NO:2.

12. The method of claim 9 wherein the truncated polypeptide has the amino acid sequence of amino acids 1-141 of SEQ ID NO:4.

13. The truncated polypeptide of any one of claims 9, 10, 11, or 12 further comprising a peptide having the amino acid sequence of SEQ ID NO: 7.

14. A method of inhibiting *PPARγ2* promoter activity comprising contacting a cell with a truncated *DEC1/Stra1*3 polypeptide lacking the *DEC1/Stra1*3 repressor domain wherein the truncated polypeptide has substantially the same *PPARγ2* promoter repressing activity as full-length *DEC1/Stra1*3 polypeptide.

15. The method of claim 14 wherein the truncated polypeptide contains the basic helix loop helix domain of *DEC1/Stra1*3.

16. The method of claim 14 wherein the truncated polypeptide has the amino acid sequence of amino acids 1-141 of SEQ ID NO:2.

17. The method of claim 14 wherein the truncated polypeptide has the amino acid sequence of amino acids 1-141 of SEQ ID NO:4.

18. The truncated polypeptide of any one of claims 14; 15, 16, or 17 further comprising a peptide having the amino acid sequence of SEQ ID NO: 7.

19. A method of inhibiting angiogenesis in a tumor comprising:

contacting the tumor with a truncated *DEC1/Stra1*3 polypeptide lacking the *DEC1/Stra1*3 repressor domain wherein the truncated polypeptide has substantially the same *PPARγ2* promoter repressing activity as full-length *DEC1/Stra1*3 polypeptide in an amount sufficient to repress *PPARγ2* promoter activity,

wherein expression of *PPARγ2* is reduced and angiogenesis is inhibited.

20. The method of claim 19, wherein said truncated *DEC1/Stra1*3 polypeptide contains the basic helix loop helix domain of *DEC1/Stra1*3.

21. The method of claim 19, wherein said truncated *DEC1/Stra1*3 polypeptide has the amino acid sequence of amino acids 1-141 of SEQ ID NO:2.

22. The method of claim 19, wherein said truncated *DEC1/Stra13* polypeptide has the amino acid sequence of amino acids 1-141 of SEQ ID NO:4.

23. The method of claim 19, wherein said tumor is selected from the group consisting of a colon tumor, a breast tumor, and a prostate tumor.

24. The method of claim 19, wherein said tumor is selected from the group consisting of tumors of the bladder, brain, cervix, connective tissue, endometrium, esophagus, liver, kidney, lung, lymph node, ovary, skin, intestine, stomach, testis, and uterus.

25. A method of inhibiting angiogenesis in an angiogenesis related disease comprising:

contacting at least one cell with a truncated *DEC1/Stra13* polypeptide lacking the *DEC1/Stra13* repressor domain wherein the truncated polypeptide has substantially the same *PPARγ2* promoter repressing activity as full-length *DEC1/Stra13* polypeptide in an amount sufficient to repress *PPARγ2* promoter activity,

wherein expression of *PPARγ2* is reduced and angiogenesis is inhibited.

26. The method of claim 25, wherein said *DEC1/Stra13* polypeptide contains the basic loop helix domain of *DEC1/Stra13*.

27. The method of claim 25, wherein said truncated *DEC1/Stra13* polypeptide has the amino acid sequence of amino acids 1-141 of SEQ ID NO:2 or SEQ ID NO: 4.

28. The method of claim 25, wherein said angiogenesis related disease is selected from the group consisting of diabetic retinopathy, obesity, macular degeneration, rheumatoid arthritis, graft rejection, angiosarcomas, Castleman disease and Kaposi sarcoma.

29. A method of identifying a *DEC1/Stra13* agonist comprising:

contacting a test compound with a cell comprising a reporter gene operably linked to a *PPARγ2* proximal promoter fragment; and

comparing reporter gene expression in the presence of the test compound with reporter gene expression in the presence of a truncated *DEC1/Stra13* polypeptide lacking the *DEC1/Stra13* repressor domain wherein the truncated polypeptide has substantially the same *PPARγ2* promoter repressing activity as full-length *DEC1/Stra13* polypeptide,

wherein reporter gene expression that is about the same indicates a *DEC1/Stra13* agonists.

30. The method of claim 25 wherein the test compound is selected from the group consisting of an organic molecule less that about 3 kDa, a polypeptide, and a nucleic acid.

31. The method of claim 25 wherein the *PPARγ2* proximal promoter fragment is the –603 to +62 *PPARγ2* proximal promoter fragment.

32. A method of identifying a *PPARγ2* agonist comprising:

contacting a test compound with a mammalian cell comprising a functional *PPARγ2* gene; and

comparing the amount of *PPARγ2* polypeptide in the presence of the test compound with the amount of *PPARγ2* polypeptide in the presence of a known *PPARγ2* agonist,

wherein reporter gene expression that is about the same indicates that the test compound is a *PPARγ2* agonist.

33. The method of claim 28 wherein the test compound is selected from the group consisting of an organic molecule less that about 3 kDa, a polypeptide, and a nucleic acid.